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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/921,636 | 08/03/2001 | Bart R. Jones | 44560 | 5802 |

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THE DOW CHEMICAL COMPANY
INTELLECTUAL PROPERTY SECTION
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| EXAMINER | |
|---|---|
| KIM, CHONG HWA | |

| ART UNIT | PAPER NUMBER |
|---|---|
| 3682 | |

DATE MAILED: 02/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/921,636 | JONES, BART R. | |
| | Examiner | Art Unit | |
| | Chong H. Kim | 3682 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *25 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *23-45* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *23-32 and 34-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *19*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on Nov 25, 2003 has been entered.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 23, 24, 26, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa, U.S. Patent 4,498,433 in view of Scola, U.S. Patent 3,926,904.

Ogawa shows, in Figs. 18-30, an oil pan assembly, comprising;

an engine component 202 having an associated first mating surface;

a molded plastic oil pan 311 configured of a layer 312 having both sealing and strengthening characteristics (inherent), the oil pan having an associated second mating surface;

an attaching device 320, 321 in contact with the first mating surface and the second mating surface for joining the first component and the oil pan to define an oil pan assembly, wherein the resulting joint has a strength greater than the strength of the molded plastic oil pan;

wherein the oil pan further comprises an additional layer 313;

wherein the first mating surface and the second mating surface are generally planar;

but fails to show an adhesive as an attaching and sealing means in lieu of the gasket and fastening device and a primer on mating surfaces.

Scola teaches, in Table II, Ex. 2, an adhesive that has the strength greater than the strength of the molded plastic oil pan.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the mechanical attaching device of Ogawa with the adhesive that is stronger than the oil pan as taught by Scola in order to provide a simpler way of attaching oil pan to the engine casing so that the cost of making can be reduced while the integrity of the entire engine casing is maintained.

As to the matter of the primer on the mating surfaces, Examiner takes official Notice the fact that providing a primer for adhesion is known in the chemical bonding art and such utilization of the practice would be within the level of ordinary skill in the art. See Pluddemann, U.S. Patent 4,961,967.

4. Claims 23 and 26-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. WO 00/43644 in view of Scola, U.S. Patent 3,926,904.

Ritter et al. shows, in Figs. 1-4, an oil pan assembly, comprising;

an engine component 32 having an associated first mating surface 36;

a molded plastic oil pan 12 (as described in the English translation, on page 3, line12) configured of a layer having both sealing and strengthening characteristics, the oil pan having an associated second mating surface 14;

an adhesive 20 in contact with the first mating surface and the second mating surface for joining the first component and the oil pan to define an oil pan assembly;

wherein the molded plastic oil pan is further configured with one or more integrally formed clips 16 or 18 that align the molded plastic oil pan with the engine component; and

wherein the first mating surface and the second mating surface are generally planar;

but fails to show an adhesive having a strength greater than the strength of the oil pan and a primer on mating surfaces.

Scola teaches, in Table II, Ex. 2, an adhesive that has the strength (TS = 12,850 psi) greater than the strength of the molded plastic oil pan and that is curable on demand upon application of a separate operation.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the silicon based adhesive of Ritter et al. with the adhesive that is stronger than the oil pan as taught by Scola in order to provide a stronger attachment means so the integrity of the engine casing is maintained.

As to the matter of the primer contacting the adhesive, Examiner takes official Notice the fact that providing a primer for adhesion is known in the chemical bonding art and such utilization of the practice would be within the level of ordinary skill in the art. See Pluddemann, U.S. Patent 4,961,967.

5. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Scola as applied to claims 23 and 24 above, and further in view of Drauglis et al., U.S. Patent 4,374,717.

Ogawa in view of Scola shows, as discussed above in the rejection of claims 23 and 24, the oil pan assembly comprising the molded plastic oil pan including two layers of materials but fails to show the pan having a plasma coating thereon.

Drauglis teaches, in column 3, lines 5-13, a thermoplastic article having a plasma coating.

It would have been obvious to a person or ordinary skill in the art at the time the invention was made to apply the plastic oil of Ogawa with a plasma coating as taught by Drauglis in order to "compensate for minute surface defects or create a high gloss underlayer" as described by Drauglis.

6. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ogawa in view of Scola as applied to claim 23 above, and further in view of Tani et al., U.S. Patent 5,250,629.

Ogawa in view of Scola shows, as discussed above in the rejection of claim 23, the oil pan assembly comprising the molded plastic oil pan but fails to show the oil pan being made of polyamide and syndiotactic polystyrene.

Tani et al. discloses, in the Abstract and in column 22, lines 3-29, an engine parts comprising a material made of polyamide and syndiotactic polystyrene.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the material of the oil pan of Ogawa with the thermoplastic

material as taught by Tani et al. in order to provide a stronger and lasting oil pan that reduces the maintenance and labor costs.

7. Claims 31, 34, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. WO 00/43644 in view of Scola, U.S. Patent 3,926,904.

Ritter et al. shows, in Figs. 1-4, an oil pan assembly, comprising;

an engine component 32 having an associated first mating surface 36;

a molded plastic oil pan 12 (as described in the English translation, on page 3, line12) having an associated second mating surface and one or more integrally formed clips 16 or 18, wherein the one or more integrally formed clips align the molded plastic oil pan with the engine component when engaged with the one or more cutout portions (portion of the engine where the clips engage) formed on the engine components;

an adhesive 20 in contact with the first mating surface and the second mating surface for joining the first component and the oil pan to define an oil pan assembly;

wherein the first mating surface and the second mating surface are generally planar;

but fails to show an adhesive that is curable on demand having a strength greater than the strength of the oil pan.

Scola teaches, in Table II, Ex. 2, an adhesive that has the strength (TS = 12,850 psi) greater than the strength of the molded plastic oil pan and that is curable on demand upon application of a separate operation.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the silicon based adhesive of Ritter et al. with the adhesive that is

stronger than the oil pan as taught by Scola in order to provide a stronger attachment means so the integrity of the engine casing is maintained.

8. Claims 31 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okabe JP404277399A in view of Ogawa and in view of Scola.

Okabe shows, in Figs. 1-3, an oil pan assembly, comprising;

an engine component 7 having an associated first mating surface;

an oil pan 2 having an associated second mating surface and one or more integrally formed clips 5, wherein the one or more integrally formed clips align the oil pan with the engine component when engaged with the one or more cutout portions 9 formed on the engine component;

an adhesive 13 in contact with the first mating surface and the second mating surface for joining the first component and the oil pan to define an oil pan assembly;

wherein the one or more cutout portions are formed on an interior portion of the engine component;

but fails to show the oil pan being molded plastic and the adhesive that has a strength greater than the strength of the oil pan.

Ogawa teaches, in column 6, lines 21-27, an oil pan assembly comprising an oil pan being made of molded plastic.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the metallic oil pan of Okabe with the plastic oil pan of Ogawa in order to provide a lighter component in a vehicle so that the better fuel economy is realized.

As to the matter of the adhesive having a strength that is greater than the strength of the oil pan, Scola teaches, in Table II, Ex. 2, an adhesive that has the strength (TS = 12,850 psi) greater than the strength of the molded plastic oil pan.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the packing of Okabe with the adhesive that is stronger than the oil pan as taught by Scola in order to provide a stronger attachment means so the sealing of the oil pan assembly lasts longer.

9. Claim 36 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. in view of Scola as applied to claim 31 above, and further in view of Tani et al., U.S. Patent 5,250,629.

Ritter et al. in view of Scola shows, as discussed above in the rejection of claim 31, the oil pan assembly comprising the molded plastic oil pan but fails to show the oil pan being made of polyamide and syndiotactic polystyrene.

Tani et al. discloses, in the Abstract and in column 22, lines 3-29, an engine parts comprising a material made of polyamide and syndiotactic polystyrene.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the material of the oil pan of Ritter et al. with the thermoplastic material as taught by Tani et al. in order to provide a stronger and lasting oil pan that reduces the maintenance and labor costs.

10. Claims 37 and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. WO 00/43644 in view of Scola, U.S. Patent 3,926,904.

Ritter et al. shows, in Figs. 1-4, an oil pan assembly, comprising;

an engine component 32 having an associated first mating surface 36;

a molded plastic oil pan 12 (as described in the English translation, on page 3, line12) having an associated second mating surface;

an adhesive 20 in contact with the first mating surface and the second mating surface for joining the first component and the oil pan to define an oil pan assembly;

wherein the first mating surface and the second mating surface are generally planar;

but fails to show an adhesive that is curable on demand having a strength greater than the strength of the oil pan.

Scola teaches, in Table II, Ex. 2, an adhesive that has the strength (TS = 12,850 psi) greater than the strength of the molded plastic oil pan and that is curable on demand upon application of a separate operation such heating or including curing egents.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the silicon based adhesive of Ritter et al. with the adhesive that is stronger than the oil pan as taught by Scola in order to provide a stronger attachment means so the integrity of the engine casing is maintained.

11. Claims 38-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. WO 00/43644 in view of Scola, U.S. Patent 3,926,904.

Ritter et al, in view of Scola shows, as discussed above in the rejection of claim 37, the oil pan assembly comprising the cure-on-demand adhesive that cures upon application of a separate operation, but fails to show specific separate operations as recited in claims 38-43.

Applicant is reminded that although the product by process claim is permissible, the process in which the product is made cannot be given patentable weight in a product claim. Therefore, since the limitations of the separate operations as set forth in claims 38-43 are process in which the adhesive is being cured, it is not given patentable weight. See MPEP § 2113.

Even if the process in the product claim is permissible, Examiner takes Official Notice the fact that such separate operations involving methods to cure adhesive is well known in the art of bonding and it would have been obvious to utilize these known process to cure an adhesive and would be within the level of ordinary skill in the art.

12. Claim 45 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ritter et al. in view of Scola as applied to claim 37 above, and further in view of Tani et al., U.S. Patent 5,250,629.

Ritter et al. in view of Scola shows, as discussed above in the rejection of claim 37, the oil pan assembly comprising the molded plastic oil pan but fails to show the oil pan being made of polyamide and syndiotactic polystyrene.

Tani et al. discloses, in the Abstract and in column 22, lines 3-29, an engine parts comprising a material made of polyamide and syndiotactic polystyrene.

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the material of the oil pan of Ritter et al. with the thermoplastic

material as taught by Tani et al. in order to provide a stronger and lasting oil pan that reduces the maintenance and labor costs.

### *Allowable Subject Matter*

13. Claim 33 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Response to Arguments*

14. Applicant's arguments with respect to claims 23-45 have been considered but are moot in view of the new ground(s) of rejection.

### *Conclusion*

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Strong adhesive utilization in mechanical attachments.

Tamura, U.S. Patent 4,546,822

Gray, U.S. Patent 4,741,352

Foister et al., U.S. Patent 4,544,432

Jorissen et al., U.S. Patent 5,548,026

Clarke, U.S. Patent 5,476,237

Arnold et al., U.S. Patent 5,265,566

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chong H. Kim whose telephone number is (703) 305-0922. The examiner can normally be reached on Tuesday - Friday; 8:00 - 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David A Bucci can be reached on (703) 308-3668. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

chk
February 4, 2004

CHONG H. KIM
PRIMARY EXAMINER